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## RAW SEQUENCE LISTING

DATE: 05/23/2002

PATENT APPLICATION: US/09/910,033A

TIME: 17:45:55

Input Set : A:\210212US0X.txt

Output Set: N:\CRF3\05232002\I910033A.raw

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3 <110> APPLICANT: RIEBEL, Bettina
4     HUMMEL, Werner
5     BOMMARIUS, Andreas
7 <120> TITLE OF INVENTION: RECOMBINANT ENZYMES HAVING IMPROVED NAD(H) ACCEPTANCE
9 <130> FILE REFERENCE: 210212US
11 <140> CURRENT APPLICATION NUMBER: 09/910,033A
12 <141> CURRENT FILING DATE: 2001-07-23
14 <150> PRIOR APPLICATION NUMBER: DE 10037101.9
15 <151> PRIOR FILING DATE: 2000-07-27
17 <160> NUMBER OF SEQ ID NOS: 7
19 <170> SOFTWARE: PatentIn version 3.1
21 <210> SEQ ID NO: 1
22 <211> LENGTH: 759
23 <212> TYPE: DNA
24 <213> ORGANISM: Lactobacillus brevis
26 <220> FEATURE:
27 <221> NAME/KEY: CDS
28 <222> LOCATION: (1)..(759)
29 <223> OTHER INFORMATION:
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33 atg tct aac cgt ttg gat ggt aag gta gca atc att aca ggt ggt acg      48
34 Met Ser Asn Arg Leu Asp Gly Lys Val Ala Ile Ile Thr Gly Gly Thr
35 1           5           10           15
37 ttg ggt atc ggt tta gct atc gcc acg aag ttc gtt gaa gaa ggg gct      96
38 Leu Gly Ile Gly Leu Ala Ile Ala Thr Lys Phe Val Glu Glu Gly Ala
39           20           25           30
41 aag gtc atg att acc gac cgg cac agc gat gtt ggt gaa aaa gca gct      144
42 Lys Val Met Ile Thr Asp Arg His Ser Asp Val Gly Glu Lys Ala Ala
43           35           40           45
45 aag agt gtc ggc act cct gat cag att caa ttt ttc caa cat gat tct      192
46 Lys Ser Val Gly Thr Pro Asp Gln Ile Gln Phe Phe Gln His Asp Ser
47           50           55           60
49 tcc gat gaa gac ggc tgg acg aaa tta ttc gat gca acg gaa aaa gcc      240
50 Ser Asp Glu Asp Gly Trp Thr Lys Leu Phe Asp Ala Thr Glu Lys Ala
51 65           70           75           80
53 ttt ggc cca gtt tct aca tta gtt aat aac gct ggg atc gcg gtt aac      288
54 Phe Gly Pro Val Ser Thr Leu Val Asn Asn Ala Gly Ile Ala Val Asn
55           85           90           95
57 aag agt gtc gaa gaa acc acg act gct gaa tgg cgt aaa tta tta gcc      336
58 Lys Ser Val Glu Glu Thr Thr Thr Ala Glu Trp Arg Lys Leu Leu Ala
59           100          105          110
61 gtc aac ctt gat ggt gtc ttc ttc ggt acc cga tta ggg att caa cgg      384
62 Val Asn Leu Asp Gly Val Phe Phe Gly Thr Arg Leu Gly Ile Gln Arg

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63          115          120          125
65 atg aag aac aaa ggc tta ggg gct tcc atc atc aac atg tct tcg atc      432
66 Met Lys Asn Lys Gly Leu Gly Ala Ser Ile Ile Asn Met Ser Ser Ile
67          130          135          140
69 gaa ggc ttt gtg ggt gat cct agc tta ggg gct tac aac gca tct aaa      480
70 Glu Gly Phe Val Gly Asp Pro Ser Leu Gly Ala Tyr Asn Ala Ser Lys
71 145          150          155          160
73 ggg gcc gta cgg att atg tcc aag tca gct gcc tta gat tgt gcc cta      528
74 Gly Ala Val Arg Ile Met Ser Lys Ser Ala Ala Leu Asp Cys Ala Leu
75          165          170          175
77 aag gac tac gat gtt cgg gta aac act gtt cac cct ggc tac atc aag      576
78 Lys Asp Tyr Asp Val Arg Val Asn Thr Val His Pro Gly Tyr Ile Lys
79          180          185          190
81 aca cca ttg gtt gat gac cta cca ggg gcc gaa gaa gcg atg tca caa      624
82 Thr Pro Leu Val Asp Asp Leu Pro Gly Ala Glu Glu Ala Met Ser Gln
83          195          200          205
85 cgg acc aag acg cca atg ggc cat atc ggt gaa cct aac gat att gcc      672
86 Arg Thr Lys Thr Pro Met Gly His Ile Gly Glu Pro Asn Asp Ile Ala
87          210          215          220
89 tac atc tgt gtt tac ttg gct tct aac gaa tct aaa ttt gca acg ggt      720
90 Tyr Ile Cys Val Tyr Leu Ala Ser Asn Glu Ser Lys Phe Ala Thr Gly
91 225          230          235          240
93 tct gaa ttc gta gtt gac ggt ggc tac act gct caa tag      759
94 Ser Glu Phe Val Val Asp Gly Gly Tyr Thr Ala Gln
95          245          250
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99 <211> LENGTH: 252
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101 <213> ORGANISM: Lactobacillus brevis
103 <400> SEQUENCE: 2
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106 1          5          10          15
109 Leu Gly Ile Gly Leu Ala Ile Ala Thr Lys Phe Val Glu Glu Gly Ala
110          20          25          30
113 Lys Val Met Ile Thr Asp Arg His Ser Asp Val Gly Glu Lys Ala Ala
114          35          40          45
117 Lys Ser Val Gly Thr Pro Asp Gln Ile Gln Phe Phe Gln His Asp Ser
118          50          55          60
121 Ser Asp Glu Asp Gly Trp Thr Lys Leu Phe Asp Ala Thr Glu Lys Ala
122 65          70          75          80
125 Phe Gly Pro Val Ser Thr Leu Val Asn Asn Ala Gly Ile Ala Val Asn
126          85          90          95
129 Lys Ser Val Glu Glu Thr Thr Thr Ala Glu Trp Arg Lys Leu Leu Ala
130          100          105          110
133 Val Asn Leu Asp Gly Val Phe Phe Gly Thr Arg Leu Gly Ile Gln Arg
134          115          120          125
137 Met Lys Asn Lys Gly Leu Gly Ala Ser Ile Ile Asn Met Ser Ser Ile
138          130          135          140
141 Glu Gly Phe Val Gly Asp Pro Ser Leu Gly Ala Tyr Asn Ala Ser Lys

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142 145          150          155          160
145 Gly Ala Val Arg Ile Met Ser Lys Ser Ala Ala Leu Asp Cys Ala Leu
146          165          170          175
149 Lys Asp Tyr Asp Val Arg Val Asn Thr Val His Pro Gly Tyr Ile Lys
150          180          185          190
153 Thr Pro Leu Val Asp Asp Leu Pro Gly Ala Glu Glu Ala Met Ser Gln
154          195          200          205
157 Arg Thr Lys Thr Pro Met Gly His Ile Gly Glu Pro Asn Asp Ile Ala
158          210          215          220
161 Tyr Ile Cys Val Tyr Leu Ala Ser Asn Glu Ser Lys Phe Ala Thr Gly
162 225          230          235          240
165 Ser Glu Phe Val Val Asp Gly Gly Tyr Thr Ala Gln
166          245          250
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172 <213> ORGANISM: Artificial Sequence
174 <220> FEATURE:
175 <223> OTHER INFORMATION: synthetic DNA
177 <400> SEQUENCE: 3
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182 <211> LENGTH: 8
183 <212> TYPE: PRT
184 <213> ORGANISM: Artificial Sequence
186 <220> FEATURE:
187 <223> OTHER INFORMATION: synthetic peptide
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192 1          5
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196 <211> LENGTH: 24
197 <212> TYPE: DNA
198 <213> ORGANISM: Artificial Sequence
200 <220> FEATURE:
201 <223> OTHER INFORMATION: synthetic DNA
203 <400> SEQUENCE: 5
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207 <210> SEQ ID NO: 6
208 <211> LENGTH: 8
209 <212> TYPE: PRT
210 <213> ORGANISM: Artificial Sequence
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213 <223> OTHER INFORMATION: synthetic peptide
215 <400> SEQUENCE: 6
217 Gly Val Asp Ser His Arg Asp Thr
218 1          5
221 <210> SEQ ID NO: 7
222 <211> LENGTH: 8

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223 <212> TYPE: PRT  
224 <213> ORGANISM: Artificial Sequence  
226 <220> FEATURE:  
227 <223> OTHER INFORMATION: synthetic peptide  
229 <400> SEQUENCE: 7  
231 Thr Asp Arg His Ser Asp Val Gly  
232 1 5

**VERIFICATION SUMMARY**

DATE: 05/23/2002

PATENT APPLICATION: US/09/910,033A

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Input Set : A:\210212US0X.txt

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